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Anthropology of Civilized Man

By Arthur MacDonald, Washington, D. C.

The anthropology of modern man, as distinguished from that of ancient, savage and prehistoric man, is very recent. A proof of this is in the fact that the first *scientific* study ever made of a human being was that conducted upon Emile Zola by some twenty French specialists in anthropology, psychology and medicine. This was published in 1897.* Even the word "anthropologist," in the sense of a student of mankind, as it is to-day, is scarcely heard. It may seem strange that anthropology has been occupied comparatively little with the investigation of modern civilized man. Whatever the reason, it is due time that anthropological study be directed much more to man as he is at the present time.

STUDY OF THE NORMAL MORE IMPORTANT THAN INVESTIGATION OF THE ABNORMAL

While the author has given much attention to the abnormal, yet one of his earliest and most extensive investigations was that of the Washington school children.[1] He also has made numerous studies of the normal in colleges and other educational institutions.[2] Also in the study of penal and reformatory institutions the inquiry concerns the normal mainly, since about three-fourths of the inmates are normal, it being their environment which was abnormal. Moreover, the

* The author has made a summary of this study in his work entitled "Juvenile Crime and Reformation," Senate Document No. 532, 60th Congress, 1st Session.

[1] Experimental Study of Children, published in the Annual Report of the U. S. Commissioner of Education, 1897-1898, Washington, D. C., 1899.

[2] A Plan for the Study of Man, Senate Document No. 400, 57th Congress, 1st Session, Washington, D. C., 1902.

methods of study are the same both for the normal and the abnormal; the study of either one assists in the study of the other.

Within past years, the author has turned his attention almost wholly to the normal, especially persons of ability, tawent or genius.[3] While the investigation of the abnormal, so-called, has its great value, the study of the normal, especially the super-normal, is still more important, for it is better to understand those things which lead to success than to learn the causes of life's failures.

POST-GRADUATE COURSE OF SCIENTIFIC STUDIES OF MAN

I appeal to university students to direct their attention especially to the scientific study of humanity. Let the university encourage students more to take up these subjects which have been so long neglected and in which there is great opportunity to aid humanity, directly, by scientific investigation of the causes.

When a student chooses for his life work a subject in the older branches of knowledge, as physics, philosophy, philology, Greek, Latin and natural history, he finds the field somewhat well developed; but not so in more recent sociological lines of research, as anthropology and other cognate subjects, in which there is full opportunity for mental acumen and scientific ability of the highest character, to carry out most lofty purposes.

The question may arise as to what course of study will prepare one best for such work. I would suggest the following:

1. Courses in psychology laboratory work.
2. Medical studies to the extent of anatomy, physiology, general pathology, nervous disease and insanity, especially clinical studies.
3. A practical course in craniology in the laboratory.
4. Facility in reading modern languages.

Thus, anthropology requires more extensive preliminary training perhaps than any subject, for it involves the investigation of man, both mentally and physically. Such training is synthetic, which in this age of specialism is much needed. Some students should be trained to combine and utilize cognate branches of knowledge. They should know enough of such branches to properly interpret the results obtained by specialists. As such education is relatively new and

[3] Mentality of Nations, published in the "Open Court," Chicago, August, 1912, also in the "Scientific American," New York City, and in "Nature" London, England, November 14, 1912. Also ESTUDIO DEL SENADO DE LOS ESTADOS UNIDOS de America. De la Revista Argentina de Ciencias Politicas. anno VIII. t. 15. Buenos Aires, 1918. 24 pages. 8°.

Scots and Scottish Influence in Congress, to be published in the Scotch Encyclopaedia, New York City.

experience in it as yet limited, it is difficult to designate a preparatory course. I have myself followed the course of study just indicated, but more extensively, especially in medical lines.

PSYCHOLOGY NOT A SCIENCE IN THE RIGID SENSE

Psychology has not as yet produced a sufficient body of truths to be called a science in the rigid sense, though it has made great progress in the application of scientific methods. Like sociology, psychology is called a science by courtesy, but this does not lessen its value, for some of the most prominent branches of inquiry have not reached the scientific status, though they are of the greatest service to the community. The older and better established subject should be the basis. Also the word "anthropology" itself is most directly applicable to man. As the modern development of psychology has been mostly in its connection with anatomical and physiological data, this brings it very close to anthropology in a fundamental way.

NEED OF A SOCIOLOGICAL LABORATORY

A large number of laboratories have been established, most of which are in the universities. But the plan of these laboratories is mainly for pedagogical purposes. The research work is generally done by students desiring to prepare theses for their doctorates. While many of these are very valuable, a university could hardly extend such work to large numbers of individuals, for to gather the facts, compute and tabulate the results, would involve clerical duties and other work not undertaken by universities. Experiments in the university are generally confined to small numbers of persons, who are a special class, so that it is doubtful whether conclusions obtained can always be applied to people in general.

The main object of a university is to prepare men for work, not to carry on their work.

There is need, then, for a laboratory different from those in our universities—that is, one not pedagogical, but sociological and practical, and of more utility to society directly.

THE ABNORMAL EXCESS OF THE NORMAL

The study of man includes abnormal as well as normal man. The fundamental conception of the abnormal is *excess* of the normal. When the normal acts in an unfit way, or at the wrong time or place, it may become abnormal. The abnormal is potentially in the normal and is further distinguished from the normal by unequal or less consistency. All that is pathological is abnormal, but not all that is abnormal is pathological. Thus a hand with six fingers is abnormal,

but not necessarily pathological.

From normality to abnormality there are many stages, and the difference between these stages is one of degree, and this difference in degree can become so great as to result in a difference in kind. Just as in mixing two chemical fluids, when the quantities reach a certain amount a precipitate is formed which is very different from the ingredients from which it was deposited. These stages constitute what may be called an intermediate zone. In this zone are those who are slightly abnormal mentally, morally, or criminally. Their status may vary with the environment. Thus, unfortunate surroundings are liable to develop their abnormalities, while under favorable circumstances, the abnormal may become normal again. Also, a man's environment may be abnormal rather than the man himself.

To study abnormal man we must investigate normal man at the same time. For we should know the normal in order to comprehend the abnormal; also the methods of investigation should be similar, for we must have some general criterion or measuring rod to distinguish between them. It is more important to study genius, talent and statesmanship than it is to investigate crime, pauperism and defectiveness. For to learn how to become useful, talented and brilliant citizens is much more advantageous than to discover what causes life's failures. But as society must protect itself, the abnormals, especially those who are dangerous, need attention. For, however insignificant such abnormals may be in themselves, they are important at least on account of the injury they can do.

A Study In Map Reading

Martha Lindley

This study was undertaken for the purpose of discovering something in regard to orientation in children and with the hope of answering the question, "When can a child read a map?"

A diagram of the Training School grounds, with roads and walks drawn in India ink and thirty-two buildings designated by

Lack of space prevents the publication of a bibliography of 98 titles of the author's publications on the above and allied subjects.

Editor.—Training School Bulletin.

squares and rectangles, was mounted on heavy card-board.

The map was placed flat on the table before the subject, so that it lay true to the points of the compass. The examiner said, "This is a map of the Training School grounds. The wide spaces, (pointing them out) are roads along which autos and wagons pass. These narrow spaces are walks or paths where the children go. These squares are buildings, like Garrison Hall—Cattell—Maxham, etc. This (placing finger on square) is Garrison Hall. Start here and tell me what all the other buildings are."

It was sometimes necessary to repeat the directions and in case of failure the subject was started at the cottage in which he lived. If there was a second failure, he was started at the entrance, Maxham Gate. In fact, every chance was given the child, the point being to satisfy ourselves whether he could adapt himself to the abstract situation sufficiently to enable him to read the plan.

Perfect success was recorded when the examiner was fully satisfied that the above was true. Partial success was recorded when the subject read a number of groups correctly and then, in going to another part of the grounds, lost his bearings entirely. Children who have been here a short time and read without trouble all the buildings that they were acquainted with received full credit, as did also some of the girls who had never been on the boys' side and could read the buildings there by groups only.

RESULTS WITH TRAINING SCHOOL GROUP

No. Tested				Success			Partial Success			Failure		
M.A.	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
11	4	7	11	3	5	8	1	1	2	0	1	1
10	5	4	9	5	3	8	0	1	1	0	0	0
9	2	5	7	0	0	0	0	1	1	2	4	6
8	5	5	10	3	1	4	0	0	0	2	4	6
7	5	3	8	0	0	0	0	0	0	5	3	8
6	0	2	2	0	0	0	0	0	0	0	0	0

A similar study with a map of the business section of the village, showing twenty-eight public buildings, was conducted with Vineland

Public School children. A diagram was placed before them and the following explanation made. "This is a map of the business centre of Vineland. This is Landis Avenue and this is the Boulevard. These little black squares represent public buildings like railroad stations, school houses, churches, theatres, etc. There are no stores or banks. Start here and tell me what each building is." The examiner then pointed to the building on the corner of Landis and the Boulevard, (the W. J. Station) and if there was no comprehension, additional explanation was given and the building named and another building pointed out. This was continued until the child had failed to locate at least three of the most centrally located buildings. If he named over two-thirds of the buildings correctly, he was counted as successful in reading the map. If more than one third, as partially successful, and if less than that as failed.

RESULTS WITH NORMAL GROUP

	Success			Part Success			Failure					
Age	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
XII	8	8	16	7	0	7	1	5	6	0	3	3
XI	6	6	12	3	1	4	1	1	2	2	4	6
X	6	6	12	3	1	4	1	0	1	2	5	7
IX	6	5	11	1	0	1	0	0	0	5	5	10
VIII	6	5	11	0	0	0	1	0	1	5	5	10
VII	9	5	14	0	0	0	0	0	0	9	5	14
	41	35	76	14	2	16	4	6	10	23	27	50

CONCLUSIONS

The interesting thing that came out of the study of the defective group was their failure to grasp the abstract, and their inability to keep a directing idea.

One girl, who had been here for nearly twenty years, mentality nine, and an unusually capable girl for that mental age, failed utterly to get the idea. Finally the examiner said, "Now, Ida, this is the

laundry where you work, here is this building right beside it, what must that be?" The reply was that it was a window in the laundry. Then the examiner again explained that only buildings were marked, told her it was the power-house and said, "Now *this* is the ***laundry*** and *this* is the *power-house*—now, what is this (pointing to the store on the other side of the laundry)?" The answer was, "Oh, that's the door on the other side."

Another girl, after explanation and after having located several buildings correctly, insisted that another square was an auto coming down the road.

The fact that three eight-year old boys read the map is, we feel, due to their having been in the School for many years and having been very active in different lines of work, thus acquainting themselves well with the grounds and buildings. The fact that higher chronological age did not increase the ability to read the plan gives further reason for confidence in mental age classification.

Men and women with mental age nine did no better than adolescent boys and girls of the same mentality, while children of ten year mentality succeeded where the chronologically older had failed.

In the Normal group the superiority of the boys over the girls is decidedly noticeable. No girl is completely successful at the age of twelve, where all boys but one are entirely so and that one succeeds in part. At age eleven three boys and one girl succeeded entirely and one boy and one girl have part success. Year ten is practically the same. Year nine shows one boy succeeding and year eight has a boy partly successful. Year seven has none succeeding and but few showed any evidence of comprehending the problem.

With the normal girls there was a decided lack of interest, while the boys were interested at once and showed much pride in their ability to read the plan. It is possible that this apparent sex difference in ability is not a real one, for it is by no means so noticeable in the feeble-minded group. It may be that it is merely a matter of interest. The institutional girl, because of segregation, would naturally be more interested in the buildings that are to be always a part of her environment; and if the normal girl's interest is awakened in the matter she may be equally able to orientate herself.

The question with us from the beginning was, "Is this comparable to Map-reading?" After careful consideration we are prepared to say that in general, it is. However, by map reading we do not

mean the parrot-like performance still too prevalent in the public schools. Intelligent reading of a map is as far removed from the pointing out and naming places as the mere recital of words is from reading for information. It is, for instance, the ability to appreciate the fact that this heavy black zig-zag line is a river—a body of running water on which boats go and come, and along whose banks cities, similar to our own, lie. It requires, we feel, just as much orientation, association and imagination to read a map intelligently as it does to read these plans. The child, who, in crossing the state of Missouri, insisted that it could not be that state because "Missouri's pink," and the Normal School seniors who contended that the St. Lawrence flows into the Great Lakes are map-readers far too representative of their respective school groups. They are quite comparable to our defectives who saw the window, door or the auto in place of buildings.

To read the plans probably calls for a somewhat easier mental process than does ordinary map reading. In the former the child is asked to see in the place of a black square, a building with whose location he is not only familiar, but with which he has also motor associations. In the latter he is putting in the place of a mark, a something that he has never seen and with which he has few, if any, associations.

Here, it seems, is our great pedagogical lesson. Place geography, to have interest for the child and to be of real use to him, must be preceded by the forming of associations with the points that he is to locate. No one will forget the location of those places that he has personally visited and with which he has familiarized himself. Let the child visit them in as many ways as possible before he locates them on the map. Send him there through descriptive geography, mythology, pictures, nature study,—any way and every way that will multiply associations for the places that he should know and then ask him to read a map and he will do it intelligently. It has been quite usual to teach groups of states and to locate them and their capitals before even the word state has any meaning for the child. Why, for instance, should he learn the capital of Virginia before he learns of the interesting life of the early settlers there, and thus have some reason for wanting to know where it is? This "Wanting to know" is a great secret of education, yet we constantly fail to apply it. The time spent in drills in place geography may be

spent to a much better advantage in enriching the child's associations, and the result should be that he will develop the habit of locating things for himself and the necessity for such drills will be removed.

Our plans, because of these associations, may have been easier for the child than is the regular map. Even so, it takes a ten year mentality to comprehend the situation sufficiently to enable him to perform the task. It is reasonable to conclude that it will take at least as high a mentality for him to read something that has less meaning for him. Teachers in Special Schools may find this of practical value. It seems of little use to attempt to teach place geography to a child whose mentality is under ten. Local geography will be all that he will be able to grasp and even that must be made very concrete. With those of older mentality it is absolutely necessary to correlate the subject in every way possible, for, even high grade defectives find it particularly hard to cope with the abstract.

The difference between the ability of boys and girls may mean that a girl's interest needs even more stimulation than does the boy's. At any rate it will be well worth the while of some investigator to find whether or not proper methods of teaching lessen this apparent sex difference.

In every community there are classes which have been referred to as the "submerged tenth." Many of these are hopeless, diseased, bad, and non-social, and many agencies exist and are at work to rescue and care for them. But the feeble-minded are not a class in that sense. They are an element in our midst that exists in every rank and class, and are found at any age from the very youngest up to old age. They enter into every phase of life, and may, and generally do, complicate it in a way which casts ultimately a heavy burden upon the community.

—Hon. Frank Egerton Hodgins

"The most prominent feature of our educational training to-day is the attention paid to instruction in industrial occupations and manual labor. In this 'education by doing' we not only have a very valuable means of exercising and developing the dormant faculties and defective bodies of our pupils, but at the same time we are training them to become useful men and women."—Dr. Walter E. Fernald.

Morale In The Special Schools

By Irene Hansen, Toledo, Ohio

"I asked my teacher if I could be put in the Special grade."

We do not often hear anything like the above, but it is said on rare occasions, and when it is, it brings great joy to the Special teacher's heart, for she knows she is succeeding in a very difficult line—that of keeping up the morale of the members of the subnormal class.

Keeping the backward children happy in a public school is a very different matter from keeping them happy in an institution. In an ordinary public school they are apt to be made sensitive by their classification as "specials" or "industrial class" or whatever the case may be.

No matter how careful the teachers are, the very appearance of these children, their lack of muscular control, inability to do scholastic work speak for themselves to the other pupils.

There are ways, however, which we have found successful in changing the attitude of the normal children towards the members of the special class, and I am sending them in the hope that others might find them as useful as we have.

First, we have made it a rule to exhibit our work to the other scholars whenever it was of the type that would cause the normal children to reverse their usual attitude and look up to, and not down upon, their less fortunate brothers and sisters. The work we exhibit is usually some of the manual work in which individual children are often quite expert. Toys, boats, airplanes, as well as real tables, book-racks, reading stands, wall desks and rugs aroused a great deal of admiration. A house complete from its cement foundation to its tiny electric lights caused many a pupil to feel a positive awe of their attainments.

Dramatics and social gatherings are forms of endeavor that have been much encouraged by Miss Anne Cowden, director of the Special Classes in Toledo. At Christmas time our pupils gave a little play and invited the pupils from the subnormal classes of the neighboring buildings to be our guests. The play was simple, but the

stage settings and decorations, and every detail of the party which followed, were given as much attention as would have been given if we were to entertain a large and critical audience. Our guests also contributed songs and recitations to the program. A Riley cycle, given by the members of Miss Sullivan's class, was a number of which any group of normal children could have very well been proud. The real charm of the entertainment did much to make the mothers feel happier over the lot of their unfortunate little ones. They, too, were able to see them doing things that were worthy of real admiration.

Whenever possible we have our pupils join in the games and sports of the other children, and one of our boys, to our great joy, became a member of the basketball team of the school.

Another way in which the retarded pupils win the respect and admiration of their comrades is by doing things for the pupils in other rooms. When the Kindergarten was given a new playhouse the "Specials" made furniture for it, little chairs and tables, a bed, and even a toy piano. When the seventh grade needed a book-rack the "Specials" made it. They make all the nets for the baskets on the basketball floor, all the bulletin boards, and are always ready to hammer, and saw, and pound, and sew, whenever such work is needed.

Thus, by careful attention to the value of placing our best foot out in view of the public, our little pupils are kept contented and happy, and occasionally have a veritable triumph when some child longs to "break into" the Special.

The diagnosis of mental deficiency, therefore..., does not rest solely on the laboratory findings, but in addition, takes into account the actual capacity for adaptation which each individual manifested in his past life.

—Dr. Bernard Glueck

We shall never arrive at any proper understanding of the causes and prevention of feeble-mindedness until we reconcentrate ourselves anew to the individual case studies and make them thorough and detailed and see where they lead us, instead of studying this class en masse, which has been the popular mode of late.

...Users of psychological tests can never afford to be mechanical.

—Edward S. Jones

Test Interpretation

S. D. Porteus

Director of Research, Training School, Vineland

Proof of the value of a series of tests does not lie wholly in the correctness of the standardization nor in *a priori* considerations as to the social importance of the capacities tested. It must be shown by an appeal to experience what the significance of individual deviations from normal performance actually is. To be of value the tests must enable us to prognosticate truly, and their verdicts must agree with the results of careful observation of the mental and moral characteristics of the subject. In a great deal of work on mental tests, far too much attention has been paid to the tests themselves and not sufficient to discovering what it is the tests really measure.

With regard to the Binet, its establishment as a valid series of tests has been mainly through its high correlation with teachers' judgments and grade standing. But school efficiency and social fitness are not the same thing, so that the Binet very often breaks down when the attempt is made to classify children for other than educational purposes. It has already been pointed out that such tests do not detect the mentally unstable, who form a large proportion of the socially unfit.

The proofs of validity may be presented either through case histories of individuals or by means of the correlation method with groups. Both methods of proof will be used here. The correlation table will serve to make clear what it is that the tests really measure and the case histories will show the social significance of the tests in cases where there is a marked difference between Binet and Porteus test ages.

Taking advantage of a trying out at Vineland by Lieutenant Lincoln of a selection from the Army performance tests, we applied also Binet and Porteus tests to the same group of subjects, and calculated the intercorrelations. To each member of the group of individuals tests Mrs. Nash, Principal of the School Department of the Training School, assigned a rank order. Her ratings were, of course, entirely independent, being made without knowledge of the individuals' rank order in the tests. Three ratings were given each individual, according to his industrial ability, educational attainments, and estimated degree of social fitness.

As regards educational attainments, judgment was based mainly on the individual's proficiency in reading, spelling, writing, letter composition, and to a somewhat lesser degree in arithmetic. In each of these, the individual's ability was well known. Similarly with regard to industrial ratings Mrs. Nash has for many years made out the schedules which allot to each individual his work in the institution, so that her rating is a direct estimate of the value of a person's work, in other words, his "community value." Wherever Mrs. Nash's ratings and the test results do not coincide we may conclude that the tests have not been far-reaching or thorough enough. With regard to the degree of social fitness the ratings represent an estimate of the relative ability of the individual to make his own way in the world. In this, consideration is given not only to the industrial ability, but to the temperamental and moral characteristics of the individual as well. Judgment was here based very largely on observation of the individual's conduct in relation to attendants, teachers and to fellow inmates, to his dependability and trustworthiness, and to the degree of his capacity for self-support. Though this estimate was necessarily more subjective than either the educational or industrial ability ratings, yet Mrs. Nash's long experience in the training of defectives gives great weight and reliability to her judgments.

The group selected for the army examination consisted of males with Binet ages ranging above 8 years. Because of this narrow range of selection correlations are necessarily more reduced than if a group, representing all degrees of feeble-mindedness, were selected for examination. As, however, the correlations relate to morons, they are of particular value. The number of males examined was 29, of females 44, and, as they had almost without exception reached adolescence, the influence of chronological age is almost negligible. The list of correlations is given in Table No. 5.

Series A gives the correlations between the Porteus test ages and Mrs. Nash's ratings for industrial, social and educational capacities.

Series B gives the correlations between the Binet test ages and the above ratings.

Series C gives the correlations with the total percentages of successes gained by the subjects in the four selected army tests. These tests were missing parts, spot pattern, cube analysis and form board tests. Finally, the Binet and the Porteus test ages were combined

for each individual and the averages taken. Series D gives the correlation with these averages.

The Spearman "Foot Rule" formula was used for the calculations and results were converted into r values by means of Table 6, Whipple's Manual of Mental and Physical Tests, Page 44.

Table of Correlations (Males)

A.	Porteus Test Age and Industrial capacity	r = .67	p. e. = .069
	" " " " Social "	r = .55	p. e. = .086
	" " " " Educational "	r = .27	p. e. = .116
B.	Binet Test Age and Industrial capacity	r = + .62	p. e. = .077
	" " " " Social "	r = + .5	p. e. = .094
	" " " " Educational "	r = + .64	p. e. = .074
C.	Total Army Test Age and Industrial cap.	r = + .61	p. e. = .078
	" " " " " Social "	r = + .61	p. e. = .078
	" " " " " Educat'n'l "	r = + .20	p. e. = .120
D.	Average Binet, Porteus and Industrial cap.	r = + .77	p. e. = .051
	" " " " Social "	r = + .66	p. e. = .071
	" " " " Educat'n'l "	r = + .47	p. e. = .098
	Binet and Porteus	r = + .21	p. e. = .119

It is interesting to note that with regard to industrial ability Porteus tests give the highest correlation. The Army tests give the highest correlation with social fitness, showing that a composite series of tests will give a better evaluation of the many characteristics that make for social efficiency. The Binet gives by far the best correlation for educational capacity. The coefficient found is of similar order to those observed in many other comparisons with educational ability.

When, however, the Binet and Porteus tests ages are combined and the average taken, the correlation with industrial ability is much higher than with either test taken singly, or with the army test. The correlation of the Binet-Porteus average with social capacity is also higher than with any single test. From these results it is evident that industrial ability is not only largely associated with mental alertness and planfulness in dealing with new concrete situations, and with the temperamental characteristics of care and prudence as tested by the Porteus tests, but is also related to the native learning capacity

of the individual, as indicated by his Binet age. In other words, we may say that the lower correlations of each single series with industrial ability is due to the fact that the Porteus test may somewhat exaggerate the community value of the steady going defective, whereas the Binet tests overrate the ability of the unbalanced or psychotic. Hence, the best estimate of mental age lies between the two. The claim made as to the necessity in all such cases of supplementing the Binet examination by the Porteus tests is fully established. It is probably true that for the diagnosis of the majority of defectives the Binet examination is all that is necessary. It is equally true that for a great number of these cases no mental examination at all is necessary for diagnosis. Almost any mental test is sufficient to demonstrate the deficiency. Over a very large number of cases it has been found that the Porteus tests place the children's mental age within one year of the Binet, in 70% of instances. The other 30% include many borderline cases, many of the psychotic, defectives with special potentialities for training along industrial lines, and individuals with good learning capacity, but poor capacity for social adjustment. In all such special cases, there cannot be too many supplementary tests used, provided the examiner knows what these tests measure. It is, however, comparatively useless to multiply tests, which do not help in discriminating the socially maladjusted. There are many borderline cases in which test after test is given, the results of each test making the diagnosis more uncertain and confused. The low correlation (.21) of Binet and Porteus tests is also noteworthy. This is due to the fact that there was included a number of mentally unstable whose records in Porteus tests were very low. Over a large group including a representative range of mentality the correlation between Binet and Porteus results is of the order .7.

For comparative purposes a group of 44 girls was examined at the Laboratory, after having been rated by Mrs. Nash on a similar basis to that used with the group of boys. The range of mental ability was wider in their case, and this will probably account for the higher correlations than were obtained with boys. Porteus tests gave a higher correlation with both industrial and social capacity, this advantage, however, being much more marked with the girls than with boys. The reason for this is that in all probability, in estimating the degree of social fitness, Mrs. Nash attached much more importance in the case of girls to the possession of the temperamental virtues of carefulness and prudence. This is on account of the peculiar social

temptations to which girls would be liable. Hence, the Binet, because of its closer relation to intellectual capacity than to temperamental characteristics, correlated lower than the Porteus. Again, a very high correlation between the Binet age and the school learning capacity was apparent.

Girls' Correlations

Porteus and Industrial	r = .75	p. e. = .045
" " Social	r = .73	p. e. = .048
" " Educational	r = .59	p. e. = .066
Porteus and Binet	r = .60	p. e. = .065
Binet and Industrial	r = .66	p. e. = .058
" " Social	r = .59	p. e. = .066
" " Educational	r = .81	p. e. = .035

For purposes of comparison, the correlations of the single army tests with each other and with the Binet and Porteus are also given.

Correlations
Army Tests

Porteus and Total Tests	r = 63	p. e. = .075
" " Missing Parts	r = 48	p. e. = .097
" " Spot Pattern	r = 45	p. e. = .100
" " Cubic Analysis	r = 48	p. e. = .097
" " Form Board	r = 54	p. e. = .089
Binet and Porteus	r = 21	p. e. = .119
Binet and Total	r = 44	p. e. = .101
" " Missing Parts	r = 33	p. e. = .112
" " Spot Pattern	r = 35	p. e. = .111
" " Cubic Analysis	r = 48	p. e. = .097
" " Form Board	r = 45	p. e. = .100

Inter Correlations

Missing Parts and Spot Pattern	r = .09	p. e. = .125
Cube Analysis and Form Board	r = .67	p. e. = .069
Missing Parts and Cube Analysis	r = .32	p. e. = .113
Cube Analysis and Spot Pattern	r = .75	p. e. = .056
Missing Parts and Form Board	r = .45	p. e. = .100
Form Board and Spot Pattern	r = .67	p. e. = .069

Abstract from "Porteus Tests—Vineland Revision"